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CRS Issue Brief

Chinese Missile and Nuclear Proliferation: Issues for Congress

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LEGISLATION

Chinese Missile and Nuclear Proliferation

SUMMARY

The Pentagon's Sept. 1, 1993 Bottom-Up Review listed proliferation as the top new danger to U.S. security interests. One problem has been China supplying CSS-2 intermediate range ballistic missiles to Saudi Arabia, Silkworm anti-ship missiles to Iran and Iraq, and ballistic missile technology to Pakistan and perhaps others. China developed the mobile, solid-fuel M-9 and M-11 short range ballistic missiles that fall within the parameters of the Missile Technology Control Regime (MTCR), reportedly with Pakistan, Syria, and Iran as interested buyers. China also has provided nuclear technology to Pakistan, Iran, and Algeria.

Facing international criticism of its proliferation activities, U.S. sanctions, and possible conditions on low MFN tariffs, China acceded to the Nuclear Non-Proliferation Treaty (NPT) on Mar. 9, 1992, and promised in November 1991 to abide by the MTCR (when the June 1991 U.S. sanctions for missile-related transfers to Pakistan were lifted). Washington effectively waived the sanctions on Mar. 23, 1992, explaining that the step was warranted by China's agreement to abide by the MTCR and to apply it specifically to the M-9s and M-11s.

Questions soon arose, however, about Chinese compliance with the MTCR, violations of which trigger U.S. sanctions as required by law. On Aug. 24, 1993, the Administration determined that China had again transferred M-11 missile related equipment to Pakistan, and imposed sanctions on missile-related trade with Chinese and Pakistani aerospace entities. Many are concerned that Chinese transfers of missile-related materials, equipment, technology, and personnel training -- if not complete missiles -- may be contributing to local pro-

duction or improvement of ballistic missiles in Pakistan, Syria, and Iran. Such transfers are difficult to prove and make indigenous programs more self-sustaining.

Another issue is China's cooperation with international nuclear nonproliferation regimes. Despite China's accession to and apparent compliance with the NPT, concerns remain about (1) its long-term programs of nuclear energy cooperation with Iran and Pakistan (which are suspected of providing civilian covers for weapons programs there); (2) its suspected continued cooperation with Pakistan's nuclear weapons program; and (3) its failure to join the Nuclear Suppliers Group and require full-scope safeguards that strengthen the NPT/IAEA safeguards (which failed in Iraq).

Bill Clinton had criticized former President Bush for rejecting human rights, trade, and nonproliferation conditionality for China's MFN status. Although Representative Pelosi and Senator Mitchell introduced MFN conditionality bills (H.R. 1890; S. 806), they supported President Clinton's May 28, 1993, Executive Order to renew MFN in 1993 with human rights considerations for an MFN renewal in 1994, but to address proliferation separately. Other unilateral tools include the MTCR-related sanctions; targeted export bans on supercomputers or satellites; or other sanctions (S. 1172 (McCain/Lieberman); S. 1054 (Glenn)/H.R. 2358 (Lantos)). A bilateral approach since November 1993 again includes security dialogue with China's military. Multilateral options may affect international lending; the Perm Five talks (H.R. 2333 (Hamilton)); and nonproliferation regimes or international groups (H.R. 2076 (Stark)). Strengthening IAEA safeguards is one example of such efforts.

MOST RECENT DEVELOPMENTS

On Aug. 24, 1993, the Administration determined that China had transferred M-11 missile related equipment to Pakistan (in violation of the MTCR) and imposed limited Category II sanctions on missile technology trade with 1 Pakistani and 11 Chinese arms exporting entities, as required by law. The primary effect of the sanctions has been on the export to China of satellites built by Hughes and Martin Marietta for launching before sanctions are scheduled to expire in 1995. Satellite exports were initially blocked by these sanctions because certain components are considered missile technology and some of those components are also considered defense articles. The China Great Wall Corp., which provides satellite launch services, is targeted by the sanctions. In January 1994, the Administration determined that State Department could not approve licenses for exports to China of satellites under its jurisdiction because those satellites contained military components that are included on the Munitions List as well as on the MTCR annex, and are blocked by the missile sanctions. It also determined that Commerce Department could approve licenses for export to China of satellites included on the Commerce Control List, even though they might contain MTCR items but no defense technology, because Commerce bases its licensing decisions on the end item being exported, not on incorporated components. In early March, Secretary Christopher announced that Hughes had agreed to remove a sensitive encryption chip from its OPTUS B-3 satellite so that it could be removed from the munitions list and could then be licensed for export to China by the Commerce Department. According to Aviation Week and Space Technology (Mar. 14, 1994) these steps removed "the last hurdles for about \$1 billion worth of satellite launches by China." In April Defense Intelligence analysts reportedly discovered that North Korea is developing two new, liquid-fueled, two-stage missiles, the Taepo Dong 1 and Taepo Dong 2 (Jane's Defense Weekly, March 12). The first stage of the TD-2 resembles the Chinese CSS-2 in size, leading some analysts to think China may have provided North Korea missile technology. Jane's credited the TD-2 with a range of up to 3500 km (2170 miles) while the Washington Times (Mar. 24) estimated a possible range of 9600 km (5670 miles). The Wall Street Journal saw a possible link between Chinese missile transfers and the MFN decision in June. In separate actions not directly related to proliferation controls, the Administration decided in November and December 1993 to allow exports to China of a Cray supercomputer and advanced telecommunications equipment, including equipment for fiber optics systems. In early November, 1993, the Pentagon resumed high-level ties to China's military.

BACKGROUND AND ANALYSIS

Chinese Missile and Nuclear Proliferation

Throughout the 1980s, Chinese arms sales and missile- and nuclear-technology exports conflicted with U.S. foreign policy goals. Chinese assurances regarding their exports were vague and unsatisfactory, but Washington moderated its criticism of Beijing in part due to China's strategic importance in counterbalancing Moscow. However, the 1989 Tiananmen crackdown, the end of the Cold War, and the 1991 Persian Gulf War against Iraq changed perceptions. The Tiananmen Square crisis stalled the improvement in U.S.-China relations and raised human rights as a central factor. The decline of China's strategic importance has supported arguments for a tougher U.S. policy toward China on proliferation, human rights, and trade.

Revelations about Iraq's missile, chemical, and nuclear weapons programs heightened concerns about the spread of such weapons technology and dual-use supplies. New disclosures in 1991 about Chinese missile and nuclear technology transfers to Pakistan and the Middle East added impetus to international criticism of China.

China and North Korea are currently the main suppliers of concern for the proliferation of nuclear weapons and ballistic missiles. Since the early 1980s, the United States has urged Chinese restraint in missile sales and un-safeguarded nuclear exports. After the United States initiated an international campaign against proliferation in the late 1980s, and since the June 1989 Tiananmen crackdown that spoiled China's image, Beijing showed greater willingness to acknowledge its missile and nuclear transfers, and to join international nonproliferation regimes. In 1992, after the U.S. threatened or imposed sanctions, China signed the Nuclear Nonproliferation Treaty (NPT) and agreed to abide by the Missile Technology Control Regime (MTCR).

Nevertheless, Chinese military exports are still troubling for several reasons. 1) China has shown both willingness and capability to transfer ballistic missiles that could be fitted with nuclear, chemical, or biological warheads. China is the only supplier to have transferred intermediate range ballistic missiles to a developing country (Saudi Arabia) and it has discussed sales with countries with nuclear arms programs in the Middle East and North and South Asia. Ballistic missiles are considered destabilizing weapons, because they can deliver nuclear or chemical weapons, and potential target countries lack defenses against missiles and therefore may launch preemptive strikes against enemy missiles or may seek their own missiles and unconventional warheads. China may have transferred missiles since it agreed to observe the MTCR guidelines.

Beijing has supplied materials and technology (reportedly including technical training) to states believed to be pursuing covert missile and nuclear weapons projects. These transfers are more troubling because of their contribution to indigenous nuclear and missile development capabilities, thus lessening dependence on foreign assistance. It is difficult to confirm that a dual-use item is being used for a weapons program. Chinese leaders may be seeking to transfer dual-use missile and nuclear technology as an effort to lessen the chance of Western reprisals. Sensitive technology transfers are especially worrisome since International Atomic Energy Agency (IAEA) inspections found that Iraq used much commercially available technology in its extensive nuclear weapons program.

Although China, after media disclosures, has provided many details about its nuclear transfers, experts find Chinese transfers troubling because of their secrecy and association with suspected nuclear bomb programs. During the Iran-Iraq War, China covertly sold Silkworm anti-ship missiles to Iran and Iraq, while issuing official denials. Since the 1980s, China's Foreign Affairs Ministry has issued vague -- and perhaps uninformed -- assurances of responsible arms exports and denials of wrongdoing only to later contradict them with admissions and elaborations. Its exports of CSS-2, M-9, and M-11 missiles and related technology have been shrouded in secrecy.

Possible Motives and Policy Constraints. Many analysts believe that sensitive Chinese arms sales are controlled by only a few very influential military and political officials in the Central Military Commission and Politburo -- and not the weaker Foreign Ministry. In addition to national defense, intelligence, and foreign policy interests, Chinese military export policy probably reflects personal interests of

the top leaders' family members who oversee arms sales companies. Since the early 1980s, China has been expanding its missile and nuclear related sales, in part to earn foreign exchange. Exports are key to the Chinese goal of modernization, especially in defense.

Several countries that were denied Western military or nuclear exports, turned to China as a supplier of sensitive technology. This position may provide greater Chinese strategic political influence in the Middle East and South Asia, and serve Beijing's foreign policy goals of asserting independent clout and checking U.S. influence on domestic and international forces. Other possible Chinese interests include balance of power concerns in South Asia and the Middle East, cheaper oil supplies, and Islamic influences over ethnic minorities in northwestern China. The extent to which Beijing shares Western nonproliferation interests is uncertain. The Chinese may be trying to satisfy missile and nuclear technology contracts despite its nonproliferation agreements.

Missile and Related Technology Transfers

CSS-2 IRBM. In 1987, during the Iran-Iraq War, China secretly sold an estimated 36 CSS-2 intermediate-range ballistic missiles (IRBM) to Saudi Arabia with a price tag believed to be \$3-3.5 billion. The range of the Saudi CSS-2s is about 2,800 km (1,740 miles) -- enough to reach Iran, Iraq, and Israel. The Saudis reportedly approached China for missiles after the Reagan Administration failed to persuade Congress to lift the limit of 60 F-15 fighters that could be sold to Saudi Arabia. Riyadh said it acquired the missiles as deterrence against possible missile attacks from Tehran.

The missiles are named DF-3 by the Chinese ("DF" for *Dong Feng*, or East Wind) and designated CSS-2 by the United States ("CSS" for Chinese Surface-to-Surface). According to *Jane's*, the CSS-2 IRBM is a single-stage missile using storable liquid fuel, first deployed by the Chinese in 1971, with a range between 2,500-3,000 km (1,553-1,863 miles). While the Chinese designed the CSS-2 missiles to carry nuclear warheads, Saudi Prince Bandar (Saudi ambassador to Washington who secretly negotiated the deal in Beijing) assured the United States that the Chinese had modified the missile to carry a large conventional warhead. The Chinese issued similar assurances. Then-Foreign Minister Wu Xueqian on Apr. 6, 1988 said that "the Saudi government made a commitment to us of no transfer, no first use of these missiles, and to use these missiles entirely for defensive purposes." While insisting that the missiles contributed to peace and stability, Wu also said that China supported Arab states against any threat of a preemptive Israeli attack on the new missiles, thus admitting that the missiles could be destabilizing. Indeed, in early 1988, Israel threatened a preemptive strike against the CSS-2s, recalling the Israeli attack on an Iraqi nuclear reactor in June 1981.

The CSS-2 sale was negotiated in 1985 and the missiles were first delivered to Saudi Arabia in late 1987, with much deception to avoid discovery by Western intelligence, according to a Mar. 29, 1988, *Washington Post* report. The Chinese allegedly shipped the CSS-2s to Saudi Arabia along with other weapons bound for Iraq. U.S. intelligence discovered the IRBMs in January 1988 when trucks carrying some of the weapons supposedly destined for Iraq were seen traveling south, instead of north, from Saudi ports. China may have been primarily motivated by both the large profits from this unique missile deal and greater political influence in the Middle East. Beijing's diplomatic rivalry with the Taipei government may also have motivated the sale, as Saudi Arabia had been one of the few remaining countries to maintain

diplomatic relations with Taiwan. The CSS-2 deal signaled the development of increasingly friendly Sino-Saudi ties, which culminated in the establishment of diplomatic relations on July 21, 1990, with Taiwan losing Saudi recognition.

M-9 SRBM. For several years, Washington has been concerned about reported Chinese attempts to sell Syria and, perhaps, Iran the M-9 short-range ballistic missile (SRBM). The M-9 is estimated to have a range of 600 km (375 miles) and exceeds the range and payload limits of the MTCR guidelines (300 km and 500 kg).

The M-9 SRBM is reported by *Jane's* to be a single-stage, solid-fuel missile with an inertial guidance system. The M-9 is fully mobile (using TELs), and is advertised as having a rapid reaction time (just 30 minutes to prepare for operation). The M-9 is considered conventional or nuclear capable, and more accurate (circular error probable (CEP) of about 650 meters) than the modified Scud-B ballistic missiles launched by Iraq during the 1991 Persian Gulf War, reported the Apr. 8, 1991, *Defense News*. China has developed the M-9 missile for export, with China Precision Machinery Import and Export Corporation (CPMIEC) marketing the missile abroad. M-9 flight tests reportedly began in June 1988. (See **Compliance with the MTCR**.)

M-11 SRBM. The United States has been concerned about the possible Chinese sale of the M-11 SRBM, or the technology associated with the missile, to Pakistan and Iran. A CPMIEC marketing brochure reportedly said that the M-11 is a 31-foot-long missile capable of carrying an 800 kg warhead up to 180 miles (290 km). The Chinese first revealed the M-11 SRBM in 1988 and reportedly successfully flight-tested it in 1990. The M-11 missile is a two-stage, solid-propellant missile with an inertial guidance system (reportedly the same guidance system as used on the M-9). The M-11 is also fully mobile and can be reloaded and ready for firing in about 45 minutes by a crew of fewer than 10 people. Transfers of the M-11s or related equipment violate the MTCR guidelines. (See **M-11s and MTCR-Related Sanctions**.)

Nuclear Technology Transfers

Pakistan. Pakistan, not a party to the NPT, is believed to be pursuing a nuclear weapons program that includes Chinese assistance. On Feb. 6, 1992, the Foreign Secretary of Pakistan admitted that his country has the components and know-how to build "at least one" nuclear explosive device. On Dec. 1, 1992, "NBC News" reported that Pakistan can assemble and drop "at least seven" nuclear weapons within hours. On Feb. 24, 1993, CIA Director James Woolsey testified that, prior to joining the NPT in 1992, China "probably provided some nuclear weapons related assistance to Islamabad," and that "it's unclear whether Beijing has broken off contact with elements associated with Pakistan's weapons programs." On July 28, 1993, Woolsey stated that China's nuclear cooperation with Pakistan is "of greater concern" than that with Iran.

The Reagan Administration had convincing evidence that China was helping Pakistan to operate its Kahuta uranium-enrichment plant and had given Pakistan a nuclear bomb design, the June 22 and 23, 1984, *New York Times* reported. The Aug. 9, 1990 *Nucleonics Week* disclosed that China designed the nuclear system for a Pakistani research reactor (Parr-2), added in 1989, which uses highly enriched uranium fuel. Also, according to the *San Jose Mercury-News* of Nov. 21, 1990 and the *New York Times* of Nov. 22, 1990, the FBI conducted a counter-intelligence investigation that

began about 1986 into Chinese theft at Lawrence Livermore national laboratory, with China subsequently using the stolen information to build a nuclear device (which some published sources identified as an experimental neutron bomb that was detonated in September 1988) and transferring some of the secrets to Pakistan. China also assisted in fuel fabrication for the rebuilt and upgraded Parr-1 research reactor, whose capacity was doubled from five to ten megawatts in 1991, the Jan. 24, 1991, *Nucleonics Week* said. Moreover, China has given Pakistan enough weapons-grade uranium to fuel two nuclear weapons, nuclear arms control specialists Gary Milhollin and Gerard White wrote in the May 12, 1991, *Washington Post*. They also stated that Chinese scientists have been sighted at the Kahuta complex (in which gas centrifuges are used to produce weapons-grade uranium), and that, in 1986, China sold Pakistan tritium (used to achieve fusion in hydrogen bombs and to increase the yield of tritium boosted nuclear bombs). China is also believed by Western intelligence to have given a design for a 25-Kt solid-core implosion device to Pakistan, *Nucleonics Week* reported May 23, 1991.

On Dec. 31, 1991, China signed a contract to build a 300-MW nuclear power reactor for Pakistan. The project will cost Pakistan the below-market price of \$500 million (with Pakistan paying for local spending and China providing foreign exchange), and China will also transfer nuclear technology, according to the Jan. 23, 1992, *Far Eastern Economic Review*. Japan, Germany, and France have reportedly denied supporting systems and components, according to Nuclear Suppliers Group policy. In 1990 and 1991, Germany and France (which has declined to sell Pakistan a reactor) began to require full-scope safeguards (IAEA inspections not only of transferred materials, but also of all other declared nuclear facilities of the recipient country). China, in contrast, does not require full-scope safeguards. Pakistan has refused IAEA safeguards on its nuclear fuel cycle program, but requested IAEA safeguards for the Chinese reactor. Chinese officials claim construction can be completed (in about 7 years) despite the Western ban on supplies. Work reportedly started on Aug. 1, 1993.

Algeria. In contrast to long-suspected nuclear cooperation with Pakistan, China's program to help Algeria (not a party to the NPT) build a nuclear reactor was secret until April 1991. The *Washington Times* on Apr. 11, 1991, first reported about the Chinese construction of a nuclear reactor in Algeria as part of a weapons program, generating renewed concerns about covert nuclear technology transfers to the Middle East. U.S. intelligence found that the nuclear reactor under construction may be used potentially to produce nuclear bomb fuel, according to the Apr. 20, 1991 *Washington Post*. The report further stated that intelligence experts were suspicious about the military nature of the reactor because: it is believed to be larger than the size required for nuclear research, there are no electrical power generation facilities, a Soviet-made surface-to-air missile battery is nearby, and the facility is located at a remote site (at Ain Oussera about 155 miles south of Algiers in the Sahara Desert south of the Atlas Mountains). According to *Nucleonics Week* of Apr. 18, 1991, some U.S. intelligence estimates of the size of the cooling towers suggest a possible upgraded power level as great as 60 megawatts. Algeria said Apr. 30, 1991 that the reactor would only generate electrical power and produce radioactive isotopes for medical research, would be fueled by low-enriched uranium, and would have a maximum thermal output of 15 megawatts.

The Chinese initially did not admit to their nuclear assistance to Algeria. On Apr. 14, 1991, the Chinese Foreign Ministry denied the *Washington Times* report without reference to a nuclear reactor. Then on Apr. 30, the Chinese issued a revised response, saying that the agreement on nuclear cooperation for China to provide a nuclear reactor

to Algeria had been signed in 1983 and that the reactor would be used only for peaceful purposes since its power would be 10-15 megawatts. The statement also claimed that since China did not join the IAEA until 1984, it did not have to seek IAEA safeguards on the deal with Algeria. In fact, China applied to join the IAEA in September 1983. Observers are concerned about the covert nature of the deal from 1983 until the public disclosure and other suspicious aspects of the reactor site. Nevertheless, the Bush Administration did not express great concern about the Chinese reactor in Algeria, especially since Algeria promised to request IAEA safeguards. The State Department said, in April 1991, that it was aware of the cooperation but had no reason to conclude that the assistance was knowingly part of a weapons program.

Iran. According to published reports and Chinese admissions, China -- Iran's largest single arms supplier during the Iran-Iraq War -- concluded covert agreements in 1989 and 1991 with Iran to provide nuclear technology. Iran also is believed to have substantial nuclear collaboration with Pakistan, long a recipient of Chinese nuclear assistance. Moreover, Iran and Syria agreed to establish joint military industries and to develop surface-to-surface missiles, according to *Middle East Today* of Oct. 3, 1991. Both have reportedly received missile technology from North Korea. CIA Director James Woolsey testified on July 28, 1993 that as "Iran's principal nuclear supplier," China has provided nuclear technology that is consistent with the NPT, but "of concern" nevertheless because of Iran's nuclear weapons program.

There had been reports of Chinese-Iranian nuclear cooperation coupled with public denials. *Nucleonics Week* of May 2, 1991 reported that U.S. and European intelligence found that since 1988, 15 Iranian nuclear engineers from Iran's nuclear research center at Isfahan have been secretly trained in China; that a secret Iranian-Chinese nuclear cooperation agreement dates from after 1985; and that China transferred technology for reactor construction and other projects at Isfahan. On June 26, 1991, a similar account appeared in the *Washington Post* about "Beijing's Tehran Connection." The Chinese embassy on July 2 responded that "China has struck no nuclear deals with Iran." The *Washington Times* reported on Oct. 16, 1991 that China Nuclear Energy Industry Corporation experts were building a nuclear reactor in Iran as part of a secret weapons program. The Chinese, on October 21, denied the story as "groundless." In early July 1991, Chinese Premier Li Peng not only visited Tehran, but especially stopped at Isfahan, China officially announced. An Arabic newspaper in London reported on July 11, 1991, that Li promised nuclear cooperation and went to Isfahan to visit Chinese nuclear scientists and the military complexes there.

In February 1992, an IAEA team visited Iran and found that a Chinese-supplied calutron (electromagnetic isotope separation equipment) and small nuclear reactor were not part of an Iranian weapons program as reported by the press in October 1991. The IAEA mission (on a pre-arranged and limited visit, not a special inspection) looked at six Iranian sites -- with the Chinese calutron and reactor -- and found no proof **there, at the time**, that any Iranian nuclear activity violated peaceful principles. The team found that the Chinese-supplied calutron is different from the calutrons used by Iraq to enrich uranium. The one in Iran was found to be a standard electromagnetic separator configured for natural zinc and used to produce stable isotopes, with no enrichment capability (at the time). The inspectors also said that the mini neutron reactor is still under construction, although the fuel has been supplied, and the IAEA will be implementing safeguards. Nonetheless, skeptics point out that: (1) Iran could still evade international discovery of any hidden nuclear weapons activity as Iraq had

done extensively; and (2) Iraq had started out with a small calutron and then developed numerous and larger ones. The Iranians reportedly said that they reluctantly turned to China after failing to obtain preferred Western assistance due to export controls.

The IAEA visit was prompted by an Oct. 30, 1991, *Washington Post* report saying that Iran is trying to build a nuclear bomb and that China is secretly providing a calutron for uranium enrichment, a nuclear reactor to be located at Isfahan, and training for Iranian nuclear engineers. On the same day, Senators Cranston and Biden expressed concern that Bush Administration officials in June 1991 had testified that they have "no reason to conclude that the Chinese are assisting Iran in developing nuclear weapons." The Oct. 31, 1991 *Washington Post*, however, alleged that U.S. intelligence had warned about China's nuclear technology transfers to Iran before June. On Nov. 4, 1991, China admitted that Chinese and Iranian companies signed "commercial" contracts in 1989 and 1991 to transfer respectively an electromagnetic isotope separator (calutron) and a small nuclear reactor, for "peaceful purposes."

China also plans to export two 300-MW nuclear reactors to Iran that would include technical training. Iran has asked that Germany or another Western country resume construction of two nuclear reactors at Bushehr damaged by Iraqi air attacks in 1987 and 1988. Western countries, suspecting a civilian cover for a weapons program, have refused. On Sept. 10, 1992, China and Iran finalized an agreement on "nuclear energy cooperation," when Iranian President Rafsanjani visited Beijing accompanied by top-level military and atomic energy officials. China estimates that the projects will take 10 years to complete, but, as with the Chinese nuclear reactor for Pakistan, supporting Western components and equipment are being denied to Iran. Iran, an NPT-signatory, has an IAEA safeguards agreement to submit all **declared** nuclear materials to inspections. However, Iraq had shown the weaknesses of the IAEA safeguards system. The United States suspects a tenacious, long-term Iranian nuclear weapons program and opposes even dual-use nuclear technology transfers to Iran. Suspicions arise partly from: (1) oil- and gas-rich Iran does not need nuclear power plants; (2) it is allegedly engaged in a \$2 billion-a-year military buildup including the nuclear program; and (3) Iran in 1991-1992 sought and almost acquired for plutonium production a large, completely-Chinese nuclear research reactor (25-30 MW) together with key fuel cycle facilities from Argentina, revealed *Nucleonics Week* (Sept. 24, 1992). U.S. pressure halted these shipments -- which are unnecessary for a peaceful nuclear program, with MFN status for China a factor, said *Nucleonics Week* (Oct. 1, 1992). The May 27, 1993, *New York Times* reported that the Clinton Administration plans a new approach to isolate Iran, including trying to persuade China to cancel nuclear deals.

Iraq. China, already a major arms supplier to Iraq, reportedly also transferred dual-use nuclear technology and know-how to that country. China helped Iraq build sophisticated magnets for stabilizing uranium enrichment centrifuges, according to *Middle East Markets* (a *Financial Times* newsletter), the *Washington Times* reported on Dec. 14, 1989. Iraq reportedly sought Chinese assistance only after failing to obtain the special magnets from British sources. China also sold Iraq low-enriched uranium from a Chinese military reprocessing plant in the late 1970s, according to *Nucleonics Week* (May 9, 1991). The Nuclear Control Institute obtained a declassified U.S. intelligence document released on July 1, 1991, showing that China during 1984-1986 conducted for Iraq a feasibility study on building a clandestine nuclear reactor. Chinese aid was apparently limited (perhaps due to Iraq's success in obtaining Western

technology before Desert Shield/Storm), but with international sanctions since late 1990, Iraq may give more consideration to Chinese technology.

Syria. On Nov. 29, 1991, China announced plans to sell a small (30-kilowatt) nuclear reactor to Syria as an IAEA technical assistance program. The IAEA first denied the Syrian request because Syria was a party to the NPT but refused to sign a safeguards agreement. In May 1992, the IAEA secured a safeguards agreement for the reactor and fuel, after Syria agreed to allow IAEA inspections of all nuclear facilities.

Nonproliferation Cooperation and Compliance

MTCR Guidelines. In April 1987, Canada, France, West Germany, Italy, Japan, United Kingdom, and the United States established the MTCR as a set of guidelines to control the export of equipment and technology that could contribute to a missile system capable of delivering **nuclear weapons** (i.e., a missile capable of delivering a 500 kg (1,100 lb) warhead to 300 km (186 miles)). "Membership" has expanded to 25 countries. The United States originally sought the cooperation of its allies in recognition of the limited effectiveness of unilateral American restraint. The Soviet Union and China were not approached to speed the negotiation process. The MTCR is not a treaty or executive agreement, and has no organization that monitors compliance (like the IAEA). U.S. statutes on sanctions in part enforce the MTCR. States adhering to the MTCR have agreed to use the guidelines in deciding whether to export a specified set of items. The guidelines call for restraint in exports of items and technologies listed in the MTCR Equipment and Technology Annex. Category I of the Annex covers the most sensitive items and technologies, including complete missile systems capable of delivering at least a 500 kg payload to a range of at least 300 km, their complete subsystems, and related production facilities and equipment. Category II lists usable components, equipment, material, and technology (such as for propulsion and guidance).

On Jan. 7, 1993, MTCR members issued new guidelines to cover delivery systems (except manned aircraft) capable of delivering all weapons of mass destruction (nuclear, chemical, and biological weapons). The MTCR now strongly calls for denying transfers of Category I items, and any missiles (regardless of payload capable of a maximum range of at least 300 km) and Category II items judged to be intended for delivering **any weapon of mass destruction**. China agreed to observe the earlier guidelines but has not addressed the new guidelines. Nevertheless, the old guidelines cover the M-9 and M-11 missiles.

Compliance with the MTCR. In Beijing in November 1991, then-Secretary of State James Baker said the Chinese agreed to observe the MTCR guidelines and parameters, and that the Americans "understand that this applies to the M-9 and M-11 missiles." As part of the bargain, China required that the United States lift the June 1991 sanctions. The Chinese Foreign Minister sent a written message (requested letter received on Feb. 1, 1992, but not yet made public) to Baker, reportedly confirming the commitment to the MTCR and not to transfer the M-9s and M-11s. China is not a "member" or formal "adherent."

Nonetheless, at issue is China's compliance with the MTCR, since any violation would still require U.S. sanctions under the Arms Export Control Act (AECA) and Export Administration Act (EAA). On Aug. 24, 1993, the Clinton Administration

determined that China violated the MTCR by transferring M-11 components to Pakistan. (See **M-11s and MTCR-Related Sanctions**.) Before that, there were reports of transfers that raised concern among some analysts that China has circumvented its agreement to abide by the MTCR, by shipping components, technology, and materials that directly or indirectly contribute to covert, local missile production programs in Iran (e.g., Tondar-68), Syria (e.g., Scuds), Pakistan (e.g., Hatf-3s), and perhaps other countries -- instead of delivering complete missiles. In addition, there is a concern that China could aid the improvement of missiles, including modifications of parts of M-series missiles for longer-range missiles and conversions from surface-to-air missiles (SAMs) into SRBMs (e.g., the 8610). The Chinese may also have retransferred anti-ballistic missile systems, such as purchased Russian S-300 systems and U.S. theater missile defense technologies that it may have obtained covertly. Recent reports indicate China may have given North Korea assistance in the Taepo-dong missile development program.

On Jan. 15, 1992, Director of Central Intelligence Robert Gates testified that Iran had turned to China for battlefield and cruise missiles. Gates also testified that Saudi Arabia is expanding its CSS-2 support facilities and that Egypt could begin operations at a missile production facility at any time. (Sino-Egyptian military ties date to 1976.) On Jan. 31, 1992, the *New York Times*, citing senior Administration officials, revealed that U.S. intelligence reports indicated that China delivered to Syria 30 tons of chemicals needed to build a solid-fuel missile and planned to transfer 60 tons more. The same report also said intelligence analysts found China had already delivered to Pakistan guidance units that could be used to control the flight of the M-11 missile. *Jane's Defence Weekly* (Feb. 1, 1992) reported that China has helped Iran to develop a new version of the M-11 missile called Tondar-68 with a range of 1,000 km (621 miles). According to the Feb. 22, 1992, *Washington Post*, an intelligence briefing on Capitol Hill (prompting Senator Biden to call for a closed session of the full Senate) disclosed that China has contracts to sell missile and nuclear related technology worth over \$1 billion to Iran, Syria, Pakistan, and other countries in the Middle East, including a contract to sell to Iran components that could be used to develop a medium-range ballistic missile. On Mar. 5, 1992, William Safire wrote in the *New York Times* that Chinese engineers are suspected to be in Syria covertly helping Syria to build missiles locally. China transferred to Iran sensitive gyroscopes "used in" missile guidance systems, according to an intelligence report cited by the *Wall Street Journal* on Mar. 18, 1992. The May 19, 1993, *Flight International*, citing Israeli intelligence sources, reported that Iran is developing a medium to long range solid-fuel missile believed to be based on the Chinese M-9 program, with Iranian funds (according to a signed agreement).

The NPT and Nuclear Suppliers Group (NSG). Since 1984, China has said that it does not advocate, encourage, or engage itself in the proliferation of nuclear weapons and that it requests IAEA safeguards as a condition for its nuclear exports since joining the IAEA in 1984. Nevertheless, China made secret, un-safeguarded nuclear transfers. China also refused to sign the NPT, calling it "discriminatory." With China shunned by Western countries after the June 1989 Tiananmen crackdown, however, Premier Li Peng personally announced on Aug. 10, 1991 (when then-Japanese Prime Minister Toshiki Kaifu made the first visit to China by a Group of Seven leader since the crackdown), that China "has in principle" agreed to sign the NPT. Chinese officials promised then-Secretary of State Baker in Beijing in November 1991 that China would sign the NPT by April 1992. China acceded to the NPT on Mar. 9, 1992.

On Feb. 24, 1993, CIA Director James Woolsey testified that Chinese nuclear deals with Algeria and Syria appear consistent with NPT obligations. On July 28, 1993, Woolsey stated that China's nuclear cooperation with Iran is NPT-consistent but "of concern," and the nuclear relationship with Pakistan is "of greater concern." Moreover, China does not require **full-scope** safeguards (IAEA inspections of all other declared nuclear materials and facilities in addition to the imported supplies). Also, China does not belong to the Nuclear Suppliers Group (NSG), a multilateral effort to harmonize and strengthen the export controls of supplier countries on all (including **dual-use**) nuclear technology. With 27 members, including Russia, the NSG agrees on up-to-date international norms to supplement the limited IAEA safeguards on fissile materials.

Policy Issues for Congress

While China in 1992 signed the NPT and promised to abide by the MTCR, concerns remain about Chinese compliance with current commitments and cooperation with international nonproliferation regimes. The U.S. policy response has been crucial but controversial -- with economic interests at times conflicting with security concerns about missile and nuclear proliferation. The Pentagon's Sept. 1, 1993, Bottom-Up Review listed proliferation as the top new danger to U.S. security interests.

Unilateral Policies

No Nonproliferation Conditions on MFN. The United States continues the longstanding policy of engagement with China, including normal MFN trade treatment. Responding partly to congressional pressures, the Bush Administration in 1991 had imposed targeted sanctions in response to Chinese MTCR-violations, while keeping the MFN status to preserve U.S. leverage and promote economic and political reform in China. Bill Clinton had criticized former President Bush for rejecting legislative efforts to link renewal of China's MFN tariff treatment to human rights, trade, and nuclear and missile nonproliferation. On May 28, 1993, President Clinton (in renewing China's MFN status) issued a Report to Congress and an Executive Order (E.O.) that specified human rights conditions for renewal of MFN in 1994, but advocated a continued separation of weapons nonproliferation issues from the policy on MFN. The E.O. stated that the Administration shall pursue other legislative and executive actions to ensure that China adheres to the NPT, MTCR, and other nonproliferation commitments.

On May 28, 1993, Senator Mitchell and Representative Pelosi supported the White House's E.O., instead of their legislation for conditions on human rights, trade, and nonproliferation (S. 806 and H.R. 1890). On May 28 and June 8, 1993, Senator DeConcini and Representative Solomon introduced S. 1065 and H.J.Res. 208 to deny China MFN status. The House rejected (105-318) H.J.Res 208 on July 21, 1993.

M-11s and MTCR-Related Sanctions. After months of policy debate, the Administration, on Aug. 24, 1993, determined that China shipped M-11 related equipment (not missiles) to Pakistan and imposed Category II sanctions. Meanwhile, Assistant Secretary of State Winston Lord indicated on Aug. 31, 1993 that Washington is ready to negotiate a waiver for the sanctions, which might require a new Chinese commitment to the MTCR. The Oct. 20, 1993 *Washington Post* reported that the National Security Council has been reviewing the decision to implement the sanctions, due to industry objections supported by the Commerce Department. Some argue U.S. security interests are at stake, and that the sanctions and U.S. credibility would be

significantly weakened if satellites are exempted. Others contend that U.S. export interests should prevail and a positive relationship with China is important for other U.S. interests such as preventing a nuclear armed North Korea. While U.S., European, and Russian companies also provide launch services, China depends on satellite launch for profit as well as prestige. U.S. law requires sanctions for 2 years, but the President may waive the sanctions if it is "essential" to U.S. national security.

On the eve of President Clinton's November 19 meeting with the Chinese president at the APEC (Asian Pacific Economic Cooperation) meeting in Seattle, the *Washington Post* of Nov. 11, 1993, reported that the Administration formally proposed waiving the sanctions in return for another Chinese promise not to export missiles and related components covered by the MTCR (but China would not have to admit the recent transfer). Apparently no progress was made on the issue at the November meeting. A more formal Chinese commitment to the MTCR might entail a bilateral Memorandum of Understanding on the MTCR, specifying a denial of certain missiles and technology, such as the U.S.-Russian agreement signed Sept. 2, 1993.

The Aug. 24, 1993, Category II sanctions on one Pakistani and eleven Chinese defense industrial aerospace entities (including China's satellite launch provider) are limited to the denial for 2 years of U.S. Government contracts and export licenses for missile equipment or technology (MTCR Annex items). China's response has been limited to a threat to end its commitment to the MTCR. The primary effect of the sanctions was on the export to China of satellites that include military technology as well as military or dual-use technology included on the MTCR annex. Satellites are not listed in the MTCR Annex but certain components are, and China Great Wall Corp. (satellite launcher) is a sanctioned company. The Administration determined in January 1994, that State Department may not issue export licenses for satellites containing military components (APStar-1 and Optus-B3, built by Hughes Aircraft Co. are subject to State licensing). Other satellites (such as AsiaSat-2 and EchoStar built by Martin Marietta Corp.) are subject to Commerce Department export licensing. The Administration determined that exports to China of these satellites on the Commerce Control List are not banned by the missile-technology sanctions because the Department of Commerce bases its licensing decisions on the end product being exported, not on component parts. But the Administration must still grant a waiver of the prohibition on exporting satellites to China under the Foreign Relations Authorization Act (P.L. 101-246). In March, Hughes agreed to remove sensitive encryption chip from its satellite so that it could be removed from the Munitions List and could then be approved for export to China by the Commerce Department. These steps reportedly removed the last hurdles for about \$1 billion worth of satellite launches by China.

The net impact of the sanctions on U.S. businesses is uncertain. Clearly, if the Chinese satellite launches had been effectively blocked some U.S. contracts would have been jeopardized, but other U.S. companies (e.g., McDonnell Douglas and General Dynamics), and Russian and European commercial launch service providers may also have benefitted from a lack of Chinese competition.

The Dec. 4, 1992, *Los Angeles Times* and *Washington Post* had first reported that intelligence analysts sighted Chinese M-11 SRBMs in Pakistan "within the last two weeks," but intelligence officials differ on whether the unconfirmed missile or missile component delivery violated the MTCR. However, the *New York Times* of May 6, 1993,

reported that in the first four months of 1993, the intelligence community collected new "compelling evidence" that China has violated the MTCR by shipping M-11 missiles or missile equipment to Pakistan. On May 14, 1993, intelligence officials briefed Members of the Senate Foreign Relations Committee on new evidence they judged to be "strongly" suggesting that China transferred M-11 missiles or missile equipment to Pakistan in violation of the MTCR, reported the *Washington Post* on May 18, 1993. The President's May 28, 1993, Report to Congress specifically cited reports that "China in November 1992 transferred MTCR-class M-11 missiles or related equipment to Pakistan." (Emphasis added.) The Administration said in August 1993 that evidence of a missile equipment transfer is "unambiguous," but evidence on a missile shipment is ambiguous. Some observers have questioned whether there are misunderstandings on the Chinese commitment to the MTCR, but the Chinese Foreign Ministry spokesman said on Sept. 2, 1993, that "China understands well the commitments it has made."

With the MTCR depending on national legislation for legal validity and enforcement, Section 73(a) of the **Arms Export Control Act (AECA)** (P.L. 90-629) and Section 11B of the **Export Administration Act (EAA)** (P.L. 96-72) require U.S. sanctions if the President determined that a foreign entity, after Nov. 5, 1990, knowingly "exports, transfers, or otherwise engages in the trade of any MTCR equipment or technology that contributes to the acquisition, design, development, or production of missiles in a country that is not an MTCR adherent..." "MTCR equipment or technology" refers to items listed in Category I or Category II of the MTCR Annex.

A 1989 U.S.-China agreement allows the China Great Wall Industry Corp. to launch nine U.S.-built satellites until 1994 and requires China to charge prices "on par" with Western competitors (about \$40-50 million per geostationary orbit launch). The Foreign Relations Authorization Act for Fys 1990-91 (P.L. 101-246) has banned the export of Munitions List items and U.S.-built satellites for Chinese launch (in response to the June 1989 Tiananmen crackdown), but the President may waive the ban.

The Aug. 24, 1993, sanctions on MTCR Annex items were imposed on China under the so-called "**Helms amendment**" to the AECA (enacted by the 102nd Congress). The language applies missile proliferation sanctions under the AECA in the case of countries with non-market economies (but excluding the former Warsaw Pact countries) to all activities of the government relating to development or production of missile equipment or technology, space systems or equipment, military aircraft, and electronics. While narrowing "aircraft" to "military aircraft," the amendment left "electronics" in original, broad terms. Nonetheless, in introducing the amendment on July 29, 1991, Senator Helms specified the intention to sanction all "arms exporting" entities.

Previously, in June 1991, then-President Bush had imposed MTCR-related sanctions as well as targeted sanctions on exports of high-speed computers and satellites, after Chinese missile technology transfers to Pakistan. These sanctions affected China Great Wall Industry Corp. (which has offered satellite launch services since 1986) and China Precision Machinery Import and Export Corp. (which has marketed the M-series missiles abroad). Imposition of the sanctions reflected security and proliferation concerns about high technology transfers to China. According to the Bush Administration, the June 1991 sanctions were effectively lifted on Mar. 23, 1992, after they successfully led the Chinese to agree to abide by the MTCR.

Iran-Iraq Nonproliferation Act. In the FY1993 Defense Authorization Act (P.L. 102-484), Congress enacted the Iran-Iraq Arms Nonproliferation Act. It requires sanctions against countries that transfer to Iran or Iraq any goods or technology (including **dual-use** items and **training or information**) that "could" contribute to the acquisition of weapons of mass destruction and their delivery systems. The required sanctions include suspension of economic and military assistance, and nuclear cooperation (less relevant for China); and AECA and EAA MTCR-related sanctions.

On June 29, 1993, Senators McCain and Lieberman introduced **S. 1172** to expand mandatory and discretionary sanctions that would be imposed against foreign suppliers helping Iran or Iraq to acquire weapons of mass destruction or the means of their delivery. Additional mandatory sanctions include suspension of U.S. and multilateral bank assistance; co-development, co-production, military, and dual-use technical exchange agreements; and transfer of Munitions List items. Meanwhile, **S. 1054 (Glenn)/H.R. 2358 (Lantos)** would require certain sanctions (e.g., affecting arms exports and Eximbank loans) on any foreign or U.S. person assisting a foreign country in acquiring a nuclear weapon or unsafeguarded nuclear material.

Bilateral Approach

Security Dialogue. After the June 1989 Tiananmen crackdown, the Bush Administration suspended military exchanges and arms sales with China, among other sanctions. Some have advocated that Washington restart a dialogue with the influential Chinese military to advance U.S. security goals, like nonproliferation. In early November 1993, the Clinton Administration resumed high-level military ties with China. Critics say that the Administration can no longer use this step as incentive for China to change its actions, including missile and nuclear technology sales.

Multilateral Options

International Lending. Congress may restrict only U.S. support for multilateral development bank (MDB) loans. For example, U.S. law requires anti-narcotics cooperation for U.S. support for MDB loans to certain countries. After the violent suppression of protests, the United States since early 1990 has supported only MDB loans to China for basic human needs. U.S. influence is limited, however, and the World Bank and the Asian Development Bank have resumed and increased substantial lending to China. In **H.Rept. 103-125 (Obey)** on H.R. 2295, the FY1994 foreign aid appropriations bill, the House Committee on Appropriations recommended that the Secretary of the Treasury develop a reform agenda for G-7 discussion aimed at denying funds from international financial institutions to countries that have not signed international agreements on nonproliferation of nuclear, chemical, and biological weapons, and missiles. **S. 1054 (Glenn)/H.R. 2358 (Lantos)** would seek to prevent the use of IFI funds for nuclear weapons acquisition.

Five Power Talks and F-16s for Taiwan. The Administration may also pressure Beijing to resume arms control talks with Paris, Moscow, London, and Washington. In his Jan. 13, 1993 nomination hearing, Secretary of State Warren Christopher stressed a multilateral approach to the Chinese proliferation problem, citing the Five Power talks. The President's May 28, 1993, report to Congress on renewal of MFN for China stated that China has a special responsibility to continue

these talks. **H.R. 2333 (Hamilton)**, the FY1994-95 State Department Authorization Act, states that the President should restart the Perm Five talks, even without China.

However, the Sept. 2, 1992, U.S. decision to sell Taiwan 150 F-16A/B fighters has complicated the Sino-U.S. dialogue on nonproliferation. China suspended its participation in the Arms Control in the Middle East (ACME), or Permanent Five, talks, arguing that Washington violated the U.S.-PRC Joint Communiqué of Aug. 17, 1982, on reducing U.S. arms sales to Taiwan. Some analysts believe some Chinese officials would increase proliferation activities in retaliation for the F-16 sale or actual deliveries. China had agreed, during the June 1991 bid for MFN, to join in President Bush's initiative for the Five Power talks that were to include **bans** on nuclear bomb materials and ballistic missiles in the Middle East. At the third meeting in May 1992, China refused to include missiles and missile technology in the guidelines on weapons of mass destruction. Multilateral pressures are believed by many observers to be more effective than unilateral U.S. actions, such as in trade or export control policy. U.S. leadership to press China to participate fully in strengthening international nonproliferation regimes would capitalize on China's desire to be treated as a "great power" and perceived as a responsible world leader.

Nonproliferation Regimes and International Groups. Recognizing limits to the effectiveness of the NPT/IAEA safeguards system -- as shown by Iraq's advanced nuclear weapons program, the U.N. Security Council has tried to strengthen the IAEA's verification authority. Section 161 of **H.R. 2333 (Hamilton)** directs the President to urge the IAEA to continue to improve its effectiveness. **H.R. 2076 (Stark)** was introduced to seek a comprehensive U.S. nuclear nonproliferation policy.

U.S., Russian, Japanese, and European officials together may urge China to also commit to the NSG and Australia Group (on chemical and biological weapons). Chinese participation is also required for regional arms control groups, such as the five-country talks proposed for South Asia by Pakistan in June 1991. The FY1993 foreign assistance appropriations act (P.L. 102-391) required a report on nuclear nonproliferation efforts in South Asia and nuclear and missile programs of China, India, and Pakistan. The State Department submitted that report on Apr. 29, 1993, stating that "concerns remain about whether China has terminated its links to Pakistan's nuclear weapons program and about its missile export policies." Kenneth Adelman has urged advancing a new international norm by expansion of the 1987 U.S.-U.S.S.R. Intermediate-range Nuclear Forces (INF) Treaty into a worldwide treaty to ban ballistic missiles and missile testings. Another forum is the new Cocom. At a November 1992 meeting, Cocom was transformed into a 42-member Cocom Cooperation Forum that includes former Soviet-bloc countries, refocusing export control from communist to proliferation threats. Russian cooperation is important as Russia is now selling China advanced weapons, and missile and nuclear technology, which worry U.S. officials because of China's enhanced capability to develop weapons for export, testified CIA Director James Woolsey on Feb. 24, 1993. On Dec. 18, 1992, Russia and China signed an agreement on the sale of Russian nuclear reactors, raising concern about re-transfer of technology to Iran and Pakistan.

LEGISLATION**H.R. 2076 (Stark)**

Establishes a policy of the United States with respect to nuclear nonproliferation. Introduced May 11, 1993; referred to Committee on Foreign Affairs. Referred on May 25, 1993, to Subcommittees on Europe and the Middle East; Economic Policy, Trade, and the Environment; Asia and the Pacific; and International Security, International Organizations, and Human Rights.

H.R. 2333 (Hamilton)

Authorizes appropriations for State Department, USIA, and related agencies. Referred to Committee on Foreign Affairs, June 8, 1993. Reported to House (H.Rept. 103-126), June 11, 1993. Passed House (273-144), June 22, 1993. Referred to Senate Committee on Foreign Relations, June 29, 1993. (Also see **S. 1281 (Pell)**.)

S. 806 (Mitchell)

Extends to the People's Republic of China renewal of nondiscriminatory (most-favored-nation) treatment provided certain conditions are met. Introduced Apr. 22, 1993; referred to Committee on Finance.

S. 1054 (Glenn)/H.R. 2358 (Lantos)

Imposes sanctions against any foreign or U.S. person that assists a foreign country in acquiring a nuclear explosive device or unsafeguarded nuclear material, and for other purposes. Referred to Committee on Foreign Relations, May 27, 1993.

S. 1065 (DeConcini)

Denies the People's Republic of China most-favored-nation trade treatment. Introduced May 28, 1993; referred to Committee on Finance.

S. 1172 (McCain/Lieberman)

Iran-Iraq Arms Non-Proliferation Amendments of 1993. Introduced June 29, 1993; referred to Committee on Foreign Relations.